

AK

**Notice of Allowability**

Application No.

10/692,376

Examiner

Marissa J. Detschel

Applicant(s)

TAMIYA ET AL.

Art Unit

2877

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to Application filed October 22, 2003.
2. ☒ The allowed claim(s) is/are 1-22.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☒ All   b) ☐ Some\*   c) ☐ None   of the:
    1. ☒ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

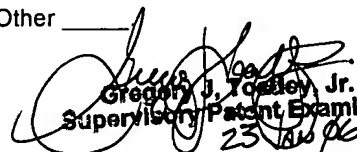
Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☒ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
  - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
    - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
  - (b) ☒ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date 01182006.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date 1/2/04
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☒ Interview Summary (PTO-413), Paper No./Mail Date 01182006.
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_

  
 Gregory J. Tordella Jr.  
 Supervisory Patent Examiner  
 23 Jan 06

### **EXAMINER'S AMENDMENT**

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Jonathan Owens (RN 37902) on January 18, 2006.

The application has been amended as follows:

- In regards to Figure 1, a label for --Prior Art-- has been added.
- In regards to Figure 2, the label "Q POING" has been replaced with --Q POINT--.
- In regards to claim 2, line 2, the phrase "on one of ends" has been replaced with --on one end--.
- In regards to claim 4, line 2, the phrase "in stack perpendicularly" has been replaced with --in a stack perpendicular--.
- In regards to claim 15, line 4, the phrase "in stack perpendicularly" has been replaced with --in a stack perpendicular--.
- In regards to claim 18, line 4, the phrase "in stack perpendicularly" has been replaced with --in a stack perpendicular--.
- In regards to claim 20, line 1, the phrase "first and light sources" has been replaced with --first and second light sources--.

- In regards to claim 21, line 4, the phrase "is connected to each of other" has been replaced with --is connected to each of the other--.

- In regards to claim 21, line 10, the phrase "is connected to each of other" has been replaced with --is connected to each of the other--.

- In regards to claim 22, line 1, the phrase "first and light sources" has been replaced with --first and second light sources--.

***Examiner's Reasons for Allowance***

Claims 1-22 are allowed over the prior art of record.

The following is an examiner's statement of reasons for allowance:

As to claim 1, the prior art of record, taken alone or in combination, fails to disclose or render obvious the use of a scale with a first and second area of first and second diffraction gratings of differing pitches in a displacement pickup utilizing first and second phase detecting means to detect phases of light returned from the first and second diffraction gratings to create an origin signal from a comparison of these two phases, in combination with the rest of the limitations of claim 1.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

***Priority***

Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d). The certified copy has been filed in parent Application No. P2002-308931, filed on October 23, 2002.

***Information Disclosure Statement***

The information disclosure statement filed on January 2, 2004 has been fully considered by the examiner.

***Pertinent Prior Art***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The prior art made of record is Watanabe (USPN 5,717,488) and Ishizuka et al. (USPN 5,017,777).

Watanabe discloses an apparatus for measuring the displacement of an object with two diffraction gratings disposed on the object utilizing two detectors that detect the phase differences between polarizations of the light coming off the two diffraction gratings.

Ishizuka discloses a an apparatus for detecting a state of rotation of a rotary scale with a diffraction grating disposed on the scale utilizing two detectors that detect the phase difference between two interference signals transmitted from two sections of the grating.

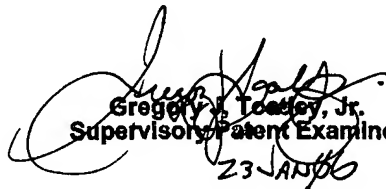
***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marissa J. Detschel whose telephone number is 571-272-2716. The examiner can normally be reached on M-F 8:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory J. Toatley, Jr. can be reached on 571-272-2059. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Marissa Detschel  
January 18, 2006  
MJD

  
Gregory J. Toatley, Jr.  
Supervisor Patent Examiner  
23 JAN 06

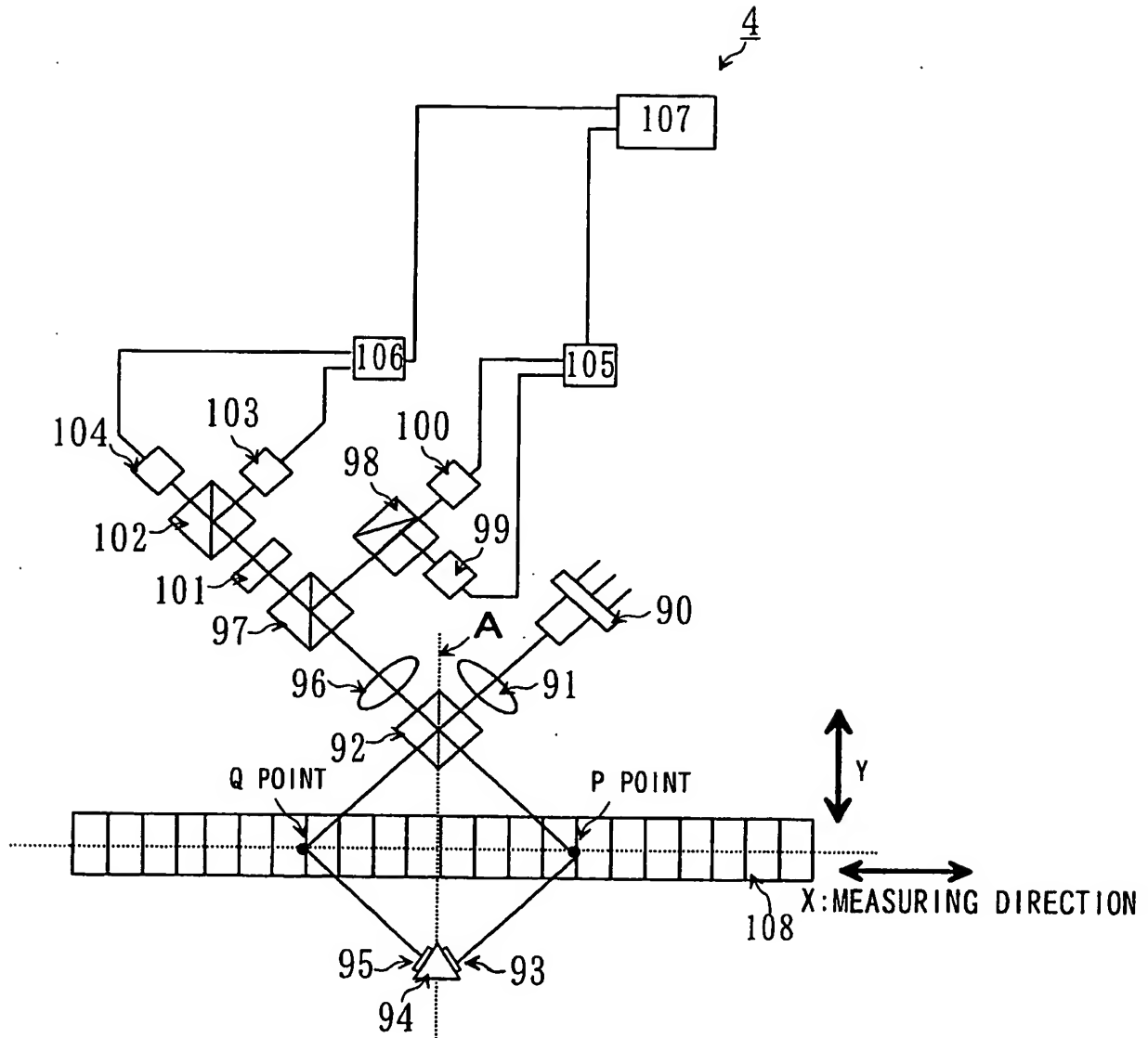


FIG. 1

PRIOR ART *mgd*

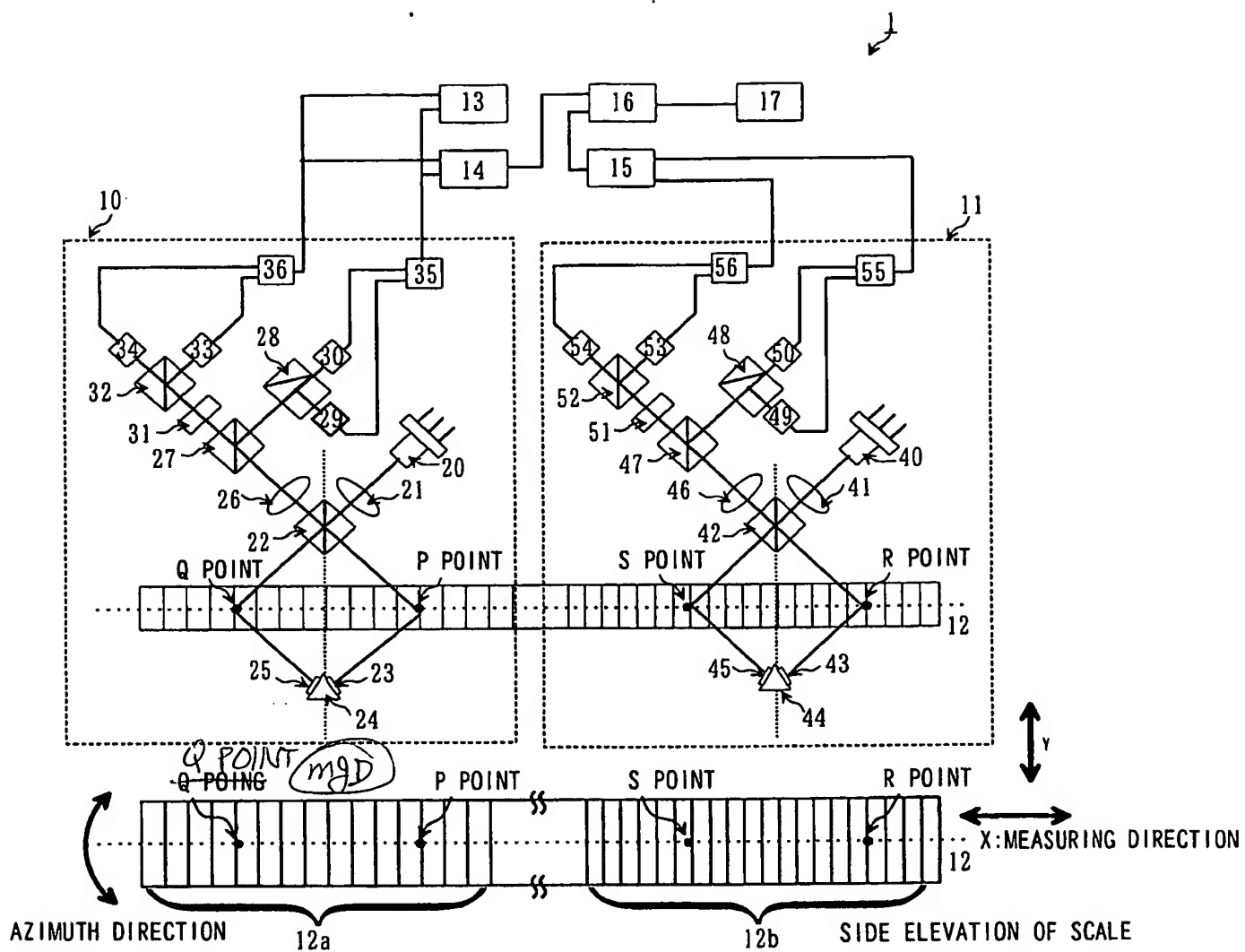


FIG. 2